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BOTANY.—*An undescribed Atropellis on cankered Pinus virginiana*.¹ M. L. LOHMAN, EDITH K. CASH, and ROSS W. DAVIDSON, Bureau of Plant Industry. (Communicated by JOHN A. STEVENSON.)

Two species of *Atropellis* have been reported (3) as occurring in association with cankers of scrub pine, *Pinus virginiana* Mill., in the Allegheny and Appalachian forest areas. The commoner of the two, *Atropellis tingens* Lohm. & Cash, is known to occur on various species of pines, native and exotic, in natural stands or plantings from New England to Florida, Ohio, and Arkansas. The other, *A. piniphila* (Weir) Lohm. & Cash, a species typically of the Rocky Mountain area and presumably very infrequent in the Southeastern States, is recorded but once for this host and once for loblolly pine, *P. taeda* L. The cankers due to these two fungi on various hosts are discussed briefly by Boyce (1). That due to *A. tingens* is described more fully by Diller (2).

It is in association with a similar canker that there has been found on scrub pine in Virginia and North Carolina a third and undescribed species of the genus, peculiarly interesting because of its rather atypical ascospores and the fact that it colors the test solution (5 per cent KOH) chocolate-brown rather than the greenish blue or bluish brown characteristic of the other species of *Atropellis* occurring on pines (2, 3). While no inoculations have been made, it is reasonable to assume that the fungus is pathogenic in view of its constant association with cankers and discolored wood as in

the case of the previously mentioned species.

What appears to be the earliest record is a specimen collected by R. W. Davidson, in Shenandoah County, Va., May, 1933. In June and July, 1933, five specimens were received among samples of diseased pines from the George Washington National Forest, New Kent and Spotsylvania Counties, Va., and Alamance County, N. C., all collected by J. D. Diller. The fungus later was noted in the field by Lohman and Diller in Buncombe, McDowell, Davie, and Forsyth Counties, N. C., at various times from the following September to June, 1934.

When the early collections of the fungus were received, it was believed to be a saprophyte of secondary importance, following mechanical or insect injury and also following cankering due to *Atropellis tingens*. In 1940, however, in the study of specimens currently collected by Diller in Goochland County, Va., the fungus was obtained in culture from ascospores and the general similarity in cultural characteristics between it and *A. pinicola* Zell. & Goodd. and *A. tingens* was demonstrated. Except for the lack of production of the *Atropellis* conidial (? spermatial) stage, which, however, likewise is lacking in all of the specimens among collections received to date, the general characteristics of the fungus are in agreement with those previously reported for ascospore cultures of *A. arizonica* Lohm. & Cash and for a number of cultures of *A. tingens* isolated from the colored infected wood of various species of pines (3).

Cultures were made from the discolored wood and from ascospores that had been

¹ The work of the present account, in part, and that incorporated in a previous account on *Atropellis* (3), in connection with which the studies herein reported were initiated, are credited to the Civilian Conservation Corps and to the Division of Forest Pathology and the Division of Mycology and Disease Survey in cooperation. Received July 6, 1942.

induced to shoot out onto the surface of corn meal agar in petri dishes. The cultures from these two sources were similar in rate of growth and general appearance. Both gave a brown reaction ("old gold" to "Hessian brown")² when particles of 3-month-old mycelium were placed in dilute KOH solution. On malt agar medium the mycelial mats were erumpent, black and uneven, of slow growth and with scattered or marginal areas of fine, gray tomentum. (Cf. 3, fig. 1, A, B.)

Most of the ascospores developed one or two septa on germination (Fig. 1, D). The germ tubes, both lateral and terminal, de-

veloped and grew slowly when the test plates were held in the refrigerator at a temperature of about 11°C. No conidia were found in cultures grown for three months, in which respect they differ from comparable cultures of *Atropellis tingens*. This fungus agrees with the four canker-forming species previously described (3), namely, *Atropellis arizonica*, *A. pinicola*, *A. piniphila*, and *A. tingens*, with respect to all features of generic importance. It is in particularly close agreement with *A. arizonica* in having relatively small apothecia,

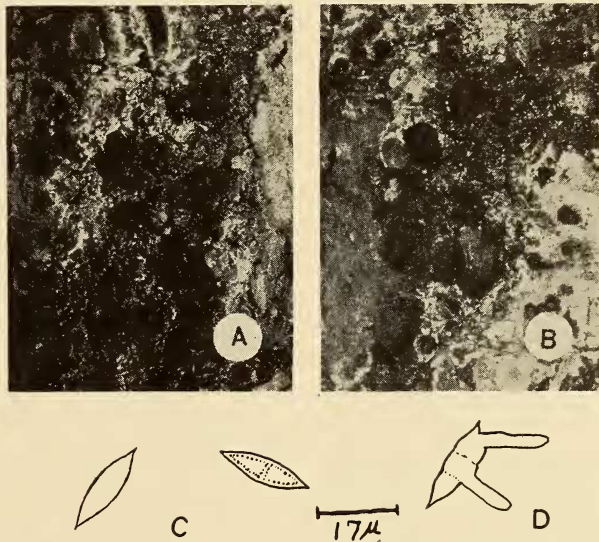


Fig. 1.—*Atropellis apiculata* on *Pinus virginiana*: A, closed, B, partly opened apothecia, $\times 10$; C, ascospores outlined with the aid of the camera lucida; D, germinating ascospore.

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the ascospore is utilized in naming this species.

Atropellis apiculata, sp. nov.

Fig. 1, A-D

Apotheciis ex cortice erumpentibus, sessilibus vel substipitatibus, plus minusve aggregatis, coriaceis, atro-fuscis, 1.5–2 mm diam., subglobosis dein expansis, patelliformibus dein exaridis hysteriformibus, aliis triangulis atque irregulariter compressis; margine undulato, laciniato, incurvato; hymenio pruinoso, cinnamomeo vel atro-fuseo; aseis cylindricoclavatis, apice obtusis, 8-sporicis, 80–110 μ longis, 10–12 μ latis; ascosporis hyalinis, fu-

² Quoted color terms are from Ridgway (4).

soideis, subsigmoideis, apiculatis, 1-2-septatis, 20-24 μ longis, 4.8-6.5 μ latis, apicibus (2-3 μ longis) inclusis; paraphysibus filamentosis, septatis, ramosis, apice brunneolis, conglutinatis; hypothecio pallide brunneo; strato interiore subhyalino; cortice crasso, atro, exterius rugoso; statu conidico in natura et culturis indeprehenso.

Hab. in cortice ramorum vivorum *Pini virginianae*.

Apothecia emerging from the bark over cankered areas, scattered or in more or less dense groups, coriaceous, sessile or substipitate, subglobose, then expanded and patellate, 1.5-2 mm in diameter, with lacerate, undulate margin, inrolled on drying, then hysteriform, triangular, or irregularly compressed, furfuraeous, dark brownish ("blackish brown" to "fuscous-black"); hymenium pruinose, light to dark brown or nearly black ("dark vinaceous-drab" to "raisin black" and sometimes lighter, "pinkish buff" or "cinnamon-rufous"); asci cylindric-clavate, gradually attenuated toward the base, broadly rounded to slightly flattened at the apex, 8-spored, 80-110 \times 10-12 μ ; spores hyaline, fusoid to subsigmoid with sharply pointed or apiculate ends, biseriata above, irregularly uniseriate below, continuous with granular contents, at last 1-septate or more rarely 2-septate, unstricted, 20-24 \times 4.8-6.5 μ , including the apiculae, 2-3 μ in length; paraphyses filamentous, septate, branched, slightly swollen at the apex, becoming granular incrustated and forming a brownish epithecium which in age breaks into islands or tufts that tend to break away; hypothecium of pale brown, fine, densely interwoven hyphae;

medullary layer 100-150 μ thick, subhyaline, appearing loose in hyphal structure; cortex about 50 μ thick at the margin and 200 μ at the base, of compacted, black, thick-walled, closely septate hyphae which on the surface build hyphal clumps that give the exciple a furfuraeous appearance.

On cankered twigs and small branches and on main stems of seedlings of *Pinus virginiana* Mill. in Virginia and North Carolina, probably widespread but infrequent.

Specimens examined.—VIRGINIA: Shenandoah County, May 25, 1933, R. W. Davidson (F. P. 66206); Goochland County, June 23, 1933, J. D. Diller 75 (F. P. 66204) and July 25, 1940, J. D. D. 1002 (F. P. 94036); New Kent County, June 20, 1933, J. D. D. 29-A (F. P. 66208) and July 25, 1940, J. D. D. 1003 (F. P. 94034); Spotsylvania County, June 23, 1933, J. D. D. 71 (F. P. 66207) and July 25, 1940, J. D. D. 1001 (F. P. 94035, *type*); George Washington National Forest, July, 1933, J. D. D. 213-A (F. P. 66209). NORTH CAROLINA: Alamance County, June 28, 1933, J. D. D. 123 (F. P. 66205).

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ENTOMOLOGY.—*New species of Anastrepha and notes on others (Diptera, Tephritidae)*.¹ ALAN STONE, Bureau of Entomology and Plant Quarantine.

As was expected when work was terminated on the writer's revision (7)² of the genus *Anastrepha*, several new species have since come to light. The present paper is designed to describe these new species and to publish additional information of interest concerning others. Some of this material is from the continued active collecting of

James Zetek, while the species from Venezuela and British Guiana were submitted by Pablo Anduze and J. N. Knull, respectively.

There has been some confusion concerning the correct family name for the fruit flies commonly known as Trypetidae. The essential facts that led to the adoption in this paper of the little-used name Tephritidae are as follows: Until very recently the writer was not aware that the name Trypetidae was not the first name used for the

¹ Received June 20, 1942.

² Numbers in parentheses refer to literature cited at the end of the paper.